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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Matthew J. Sherman

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EXAMINER

NG, CHRISTINE Y

ART UNIT

PAPER NUMBER

2663

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

10/044,916

Applicant(s)

SHERMAN, MATTHEW J.

Examiner

Christine Ng

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2663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-10, 12 and 18-22 is/are rejected.
- 7) ☒ Claim(s) 6, 7, 11 and 13-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/14/02.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear whether "a unicast address" of the transmitting station address (line 2) is the same as "the unicast address" of the receiving station address (lines 2-3). It is also unclear whether "the unicast address" (lines 3-4) is referring to the transmitting station address or the receiving station address.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,963,549 to Jayaraman et al.

Referring to claim 1, Jayaraman et al disclose in Figure 1 a method for spoofing stations (20) while transmitting data through a medium, the method comprising:

Setting (by central authority 42) a duration value to a value other than a time period for a predetermined subsequent message transmission.

Sending (by central authority 42) a signal (frame) containing the duration value, wherein at least one of the stations (20) is an obeying station that updates a network allocation vector (NAV) in accordance with the duration value. The central authority 42 transmits frames that include information to populate the NAVs (that are maintained locally by all stations 20 within the cell 50) with indication that the wireless transmission medium is busy during the upcoming reserved timeslot. Refer to Column 3, lines 31-44. At the expiration of the reservation period, the central authority 42 sends out a refresh notice to the station 20 and if the station 20 does not respond with a refresh request, the central authority 42 frees up any resources that are allocated to the station 20 and removes the associated time slot from its reservation vector. Also, the central authority 42 may free up the time slots 160 that are allocated to a particular station 20 if the station 20 does not transmit during one of its allocated time slots 160. Refer to Column 5, lines 5-29. Therefore, the duration value is set not to a value for a *predetermined subsequent message transmission*, but to a reserved time period for use of time slots that can be extended or cancelled at any time. The station can extend the reserved time period by responding to the refresh notice. The station can cancel the reserved time period by not responding to the refresh notice, or by not transmitting during one of its allocation time slots.

Referring to claim 2, Jayaraman et al disclose in Figure 1 that the duration value represents a time period for suppressing transmissions by the obeying station. "When

either the physical or the virtual carrier sense functions of a local station 20 that needs to transmit indicate that the wireless transmission medium is busy, transmission is deferred". Refer to Column 3, lines 27-30.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3, 4, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,963,549 to Jayaraman et al in view of U.S. Patent No. 6,965,942 to Young et al.

Referring to claim 3, Jayaraman et al do not disclose that the sent signal is a clear-to-send signal.

Young et al disclose in Figure 1 that stations within a BSS communications with the Access Point AP to reserve the transmission medium for a specified period of time. Upon receipt of a request-to-send (RTS) signal, the AP responds with a clear-to-send (CTS) signal, which specifies the period of time for which the medium is reserved. All stations receiving either the RTS or CTS signals will set their NAVs according to the given duration. Refer to Column 8, lines 12-26. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the sent signal is a clear-to-send signal; the motivation being that a clear-to-send signal

specifies the period of time for which the medium is reserved, thereby preventing other stations from transmitting when the medium is busy.

Referring to claim 4, Jayaraman et al do not disclose that the sent signal further comprises a receiving station address.

Jayaraman et al disclose in Figure 1 that stations can receive a request-to-send (RTS) signal or a clear-to-send (CTS) signal, thereby implying that the clear-to-send signal includes a destination address so that it can be addressed to the designated station. Refer to Column 8, lines 12-26. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the sent signal further comprises a receiving station address; the motivation being that the clear-to-send signal must include the destination address in order to facilitate routing of the packet for medium reservation.

Referring to claim 8, Jayaraman et al do not disclose that the sent signal is a request-to-send signal.

Young et al disclose in Figure 1 that stations within a BSS communications with the Access Point AP to reserve the transmission medium for a specified period of time. The station wanting to transmit a data frame first transmits a request-to-send (RTS) signal to the AP that contains the source, destination and duration of the following transmission. Refer to Column 8, lines 12-26. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the sent signal is a request-to-send signal; the motivation being that the request-to-send signal carries the requested duration that the station needs for its transmission, thereby

reserving the medium for its transmission and preventing other stations from transmitting during that time.

Referring to claim 9, Jayaraman et al do not disclose that the sent signal further comprises a transmitting station address and a receiving station address.

Young et al disclose in Figure 1 that stations within a BSS communications with the Access Point AP to reserve the transmission medium for a specified period of time. The station wanting to transmit a data frame first transmits a request-to-send (RTS) signal to the AP that contains the source, destination and duration of the following transmission. Refer to Column 8, lines 12-26. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the sent signal further comprises a transmitting station address and a receiving station address; the motivation being that the request-to-send signal includes the source and destination address in order to facilitate routing of the packet for medium reservation.

7. Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,963,549 to Jayaraman et al in view of U.S. Patent No. 6,965,942 to Young et al, and in further view of U.S. Patent No. 6,611,521 to McKay et al.

Referring to claim 5, Jayaraman et al do not disclose that the network allocation vector is updated if the receiving station address is a group address and the obeying station is in a group identified by the group address.

McKay et al disclose that reservation control can be implemented through group addressing or multicasting addressing techniques. Multiple stations share a unique address and when data is sent to the group address, all stations listening on the group

address will receive the data. Refer to Column 3, lines 24-43 and Column 7, line 63 to Column 8, line 24. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the network allocation vector is updated if the receiving station address is a group address and the obeying station is in a group identified by the group address; the motivation being to address multiple stations using one unique address.

Referring to claim 10, Jayaraman et al do not disclose that the network allocation vector is updated if the receiving station address is a broadcast address.

McKay et al disclose that reservation control can be implemented through group addressing or multicasting addressing techniques. Multiple stations share a unique address and when data is sent to the group address, all stations listening on the group address will receive the data. Refer to Column 3, lines 24-43 and Column 7, line 63 to Column 8, line 24. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the network allocation vector is updated if the receiving station address is a broadcast address; the motivation being to address multiple stations using one unique address.

8. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,963,549 to Jayaraman et al in view of U.S. Patent No. 5,557,745 to Perlman et al.

Jayaraman et al do not disclose that transmissions of unknown protocols are given preferential use of the medium when the transmissions by the obeying station are suppressed.

Perlman et al disclose that as computer networks grow larger and more complex, a variety of operating protocols have evolved and it is desirable to allow communication between widely spaced networks of a given protocol that are not directly connected for that protocol. These are known as foreign protocols, or protocols that are different from the most frequently used protocol in the network. Refer to Column 1, lines 22-30 and Column 1, line 63 to Column 2, line 17. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that transmissions of unknown protocols are given preferential use of the medium when the transmissions by the obeying station are suppressed. One would be motivated to do so in order to accommodate the growing number of foreign protocols, and allow them to use the medium since they are unknown to the current operating protocol.

9. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,963,549 to Jayaraman et al in view of U.S. Patent No. 5,721,725 to Want et al.

Jayaraman et al do not disclose that transmissions of hidden stations are given preferential use of the medium when the transmissions by the obeying station are suppressed.

Want et al disclose in Figure 3 that the "hidden terminal problem" is common in wireless systems. A sends a RTS signal to B to clear the medium for use, but C is hidden from A. C will not know when the medium is clear for C to transmit because the RTS field and the transmitted data from A cannot be detected by C. Not every transceiver can be aware of every other transceiver in the medium. Refer to Column 2,

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lines 3-29 and Column 3, lines 3-33. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that transmissions of hidden stations are given preferential use of the medium when the transmissions by the obeying station are suppressed. One would be motivated to do so in order to allow hidden terminals use of the medium since they are normally hidden from other terminals and cannot gain access to the medium since other terminals cannot detect their RTS/CTS signals.

10. Claims 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,963,549 to Jayaraman et al in view of U.S. Patent No. 6,920,171 to Souissi et al.

Referring to claim 20, Jayaraman do not disclose that critical transmissions are given preferential use of the medium when the transmissions by the obeying station are suppressed.

Souissi et al disclose that during predicted collision slots, lower priority devices abstain from transmitting and collisions are avoided since the higher priority packets will be transmitted. Lower priority devices are deliberately limited to give the higher priority devices an advantage. Refer to Column 8, lines 18-28 and Column 18, lines 42-46. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that critical transmissions are given preferential use of the medium when the transmissions by the obeying station are suppressed. One would be motivated to do so in order to allow higher priority packets to be transmitted before lower priority packets.

Referring to claim 22, Jayaraman et al do not disclose that stations of an enhanced version of a standard are given preferential use of the medium when the transmissions by the obeying station are suppressed.

Soussi et al disclose higher priority devices have their communicating capabilities enhanced. During predicted collision slots, collisions are avoided because lower priority devices abstain from transmitting and allow higher priority devices to employ enhanced transmission resources and transmit during the collision slots. Refer to Column 8, lines 18-28 and Column 18, lines 42-46. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that stations of an enhanced version of a standard are given preferential use of the medium when the transmissions by the obeying station are suppressed. One would be motivated to do so in order to allow higher priority devices with enhanced communication capabilities to transmit before lower priority devices.

11. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,963,549 to Jayaraman et al in view of U.S. Patent No. 6,754,176 to Gubbi et al.

Jayaraman et al do not disclose that at least some of the stations are provided in an overlapping basic service set, and stations of the overlapping basic service set are given preferential use of the medium when the transmissions by the obeying station are suppressed.

Gubbi et al disclose in Figure 3 a method for managing network components (n2)

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that are within the overlapping regions of two basic service sets. PC-A and PC-B negotiate their contention free periods and indicate/reserve a portion within their individual contention free periods for communication from/to their devices in the overlapping regions. Refer to Column 4, line 53 to Column 5, line 35 and Column 7, line 56 to Column 8, line 15. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that at least some of the stations are provided in an overlapping basic service set, and stations of the overlapping basic service set are given preferential use of the medium when the transmissions by the obeying station are suppressed. One would be motivated to do so in order to allow stations in the overlapping regions to transmit on the medium since they normally experience colliding transmissions. Refer to Column 4, lines 47-49.

Allowable Subject Matter

12. Claims 6, 7, 11 and 13-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Ng 
February 7, 2006



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